Attorney's Docket No.: 07319/096001

In the claims:

Please cancel claims 3 and 5.

Please amend the remaining claims as follows:

A1

1. (Currently amended) An apparatus, comprising:

an optical device including an optical filter having characteristics that vary across a gradient axis thereof; and

a memory unit, storing calibration data for the specific optical filter, which calibration data relates to optical characteristics which are individual to the specific optical filter in said optical device, and which affects the way said optical filter is used;

a filter moving element, which moves said filter to change a position of the gradient axis that intersects said optical axis and thereby change a characteristic of filtering, wherein said filter moving element is responsive to said calibration data,

said filter moving element including a motor, and servo electronics driving the motor, said servo electronics including a memory table which includes a list of specified colors, and positions for the specified colors, and wherein said positions include said calibration data.

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2. (Original) An apparatus as in claim 1, further comprising an optical source, producing optical energy along an optical axis thereof, said optical axis intersecting said gradient axis of said optical filter.

3. Cancelled

4. (Original) An apparatus as in claim 1, wherein said filter is round and said gradient axis extends around a circumference of said filter.

5. (Cancelled)

6. (Original) An apparatus as in claim 5, wherein said optical filter includes a position marking, marking a specified point on the optical filter.

7. (Original) An apparatus as in claim 5, wherein said calibration data includes a table of points indicating a specified position in a cut on curve.

8. (Original) An apparatus as in claim 7, wherein said specified position is a 50 percent position.

9. (Original) A lighting apparatus, comprising:

an optical source, projecting light along an optical axis;

an optical filter, having an optical characteristic that varies according to a parameter thereof, located in a position intersecting said optical axis, and such that the parameter can be varied on said optical axis;

a controllable motor, coupled to move said optical filter to vary said parameter relative to said optical axis; and

a controller for said motor, said controller including an indication of specified colors on said optical filter, and specified parameter values for said colors, said specified parameter values including data which is specific to the individual optical filter.

10. (Original) An apparatus as in claim 9, wherein said controller includes a lookup table with a plurality of parameter values related to color values.

11. (Original) An apparatus as in claim 9, wherein said parameter includes a position on said filter represented by a gradient axis, wherein said gradient axis intersects said optical axis, and said controllable motor moves said optical filter to move a position of

intersection between said gradient axis and said optical axis based on said parameter values in said controller.

12. (Original) An apparatus as in claim 11, wherein said controller includes a memory table having a plurality of position values, related to color values, said position values including calibration data which is specific to the individual filter.

13. (Original) An apparatus as in claim 11, wherein said optical filter includes a hub which contains the filter, and which includes a position detecting device which sets a specified position of the hub.

14. (Original) A method, comprising:

forming an optical filter assembly having an optical characteristic that varies according to a parameter thereof;

using an optical device to form information about said optical characteristic on the optical filter, and to obtain information which is individual for each specific optical filter; and

using said information which is individual for each specific optical filter to modify a profile used to move said optical filter.

15. (Original) A method as in claim 14, wherein said profile used to move said optical filter is a profile that drives a motor.

16. (Original) A method as in claim 14, wherein said using an optical device comprises using a spectrophotometer to scan a region of the filter to form a set of data indicating transmittances as a function of wavelength.

17. (Original) A method as in claim 16, further comprising analyzing said data to find a specified point in a slope curve formed by said data, said specified point forming said information which is individual to each specific optical filter.

18. (Original) A method as in claim 17, wherein said specified point in said slope curve is at 50 percent of the cut on point.

19. (Original) A method as in claim 17, wherein said specified point in said slope curve is a value that allows

any color at any point in the filter to be represented by a single value.

20. (Original) A method as in claim to 14, wherein said optical device has a first aperture which is different than a second aperture at which said optical filter will be used.

21. (Original) A method as in claim 20, further comprising compensating for an aperture mixing effect caused by said different aperture.

22. (Original) A method as in claim 21, wherein said compensating comprises determining values at different scans in the first aperture, and averaging said values over said second aperture.

23. (Original) A method as in claim 22, wherein said optical filter assembly is substantially round, and said determining values comprises determining radial segment values.

24. (Original) A method as in claim 22, wherein said determining values comprises determining a first area of the segment encompassed by said first aperture, and

determining a proportion of said first area within the second area represented by an area of said second aperture.

25. (Original) A method as in claim 22, wherein said compensating comprises determining an area of the first aperture and an area of the second aperture, and a ratio between said areas, and weighting a value of said first aperture according to said ratio.

26. (Original) A method, comprising:

projecting light along an optical axis;

placing an optical filter assembly along said optical axis in a location such that a position of said optical filter assembly on said optical axis causes a different optical color effect to be caused by said optical filter assembly;

moving said optical filter assembly with the motor;

setting a memory map for said motor which is common for each of a plurality of different optical filter assemblies, and which relates positions on said motor to different colors for said each of said plurality of different optical filter assemblies; and

changing said memory map using individual data which is specific for each individual optical filter assembly.

27. (Original) A method as in claim 26, wherein said changing comprises determining individual features of said optical filter assembly, and color transmittances of said optical filter assembly, forming data indicative of said individual features, and using said data to change said memory map.

28. (Original) A method as in claim 27, wherein said forming data comprises determining a specified point in a slope curve for each of a plurality of areas which is effective to allow characterization of the color of any point in the filter as represented by a single value.

29. (Original) A method as in claim 28, wherein said specified point in the slope curve is 50 percent of the cut on value.

30. (Original) A method as in claim 27, wherein said determining individual features, comprises scanning the filter to determine transmittances of the filter at different locations, producing a map indicating specified cut on points as functions of positions in said filter, compensating for a difference in apertures between said

scanning and an aperture of the light projected along the optical axis, and using compensated data to change said memory map.

31. (Original) A method, comprising:

forming a plurality of optical devices including optical filters with characteristics that vary along a gradient axis thereof;

calibrating said plurality of optical filters to determine color characteristics thereof and forming calibration data indicative of said calibrating; and

commanding each of said plurality of optical devices to produce the same color, and using said calibration data in each of said optical devices to ensure that each of said optical devices produces the same color.

32. (Original) An apparatus, comprising:

an optical lamp, projecting light along an optical axis, said light having a first aperture size;

a color filter, having a projection area located along said optical axis, said projection be area located along a gradient axis of said color filter, and said color filter having a characteristic whereby color projected by the color filter varies along said gradient axis;

a motor, connected to move the color filter, into locations such that different areas of said gradient axis are presented to said optical axis; and

a motor controlling element, including a servo mechanism which drives said motor, and stored data which represents a position of said color filter that corresponds to a specified color, said data including calibration data which is individual and specific to the color filter associated with said motor controlling element.

33. (Original) A method, comprising:

forming a plurality of optical devices including optical filters with characteristics that vary along a gradient axis thereof;

calibrating said plurality of optical filters using a device that has a first aperture to determine color characteristics thereof and forming calibration data indicative of said calibrating;

compensating said calibration data for a difference between said first aperture, and a second aperture that will be used to project light using said plurality of optical devices; and

using the compensated calibration data to commanding each of said plurality of optical devices to produce specified colors.